

EXAMINATION TASK**TEST OF ENGLISH**

TASK 1 Read the text. Decide if the statements (1–6) are true or false.
Mark the statements as *T (True)* or *F (False)*.

12 points

- 1 ____ Researchers at the Brown Institute for Brain Science are investigating how movement is controlled by thinking.
- 2 ____ BrainGate works by reading brain signals and sending the information to a computer chip, which changes the signals into movement.
- 3 ____ A person with BrainGate can use the robotic arm to make coffee and a sandwich.
- 4 ____ When the technology is available for use, it is likely to cost around \$1,000 per person.
- 5 ____ There is now also a wireless version of BrainGate.
- 6 ____ Donoghue says it will be possible to make the perfect soldier using this technology.

MIND CONTROL

Imagine looking at something and being able to move it just by using your brain! That is exactly what the new technology called BrainGate can do – with the help of a robotic arm, anyway.

BrainGate is the idea of Professor John Donoghue and his team of researchers at the Brown Institute for Brain Science, in Providence, Rhode Island, USA, who investigate how humans change thoughts in the brain into movements. BrainGate is attached directly to the brain. First of all, gold wires are put into the part of the brain that controls movement. These are then connected to a small computer chip which is just a few millimetres in size. When the person thinks about different movements, this creates electrical signals, which are picked up by the chip. After this, the signals that are created by the brain are sent back to a computer, which changes the signals into movements. Finally, the computer uses the robotic arm to carry out these movements. BrainGate can already be used to write an e-mail, operate the TV remote control or even play computer games, just by brain power.

The technology is still in the early stages of development but it has already cost millions of dollars to develop and when it is available for use, it will probably cost thousands of dollars per person. There are still many challenges ahead for Donoghue and his team. They are currently planning a mini wireless version of the device, which will allow people to be connected to the computer at all times. Donoghue also dreams of using this technology to help disabled people who can't move their arms and legs. He plans to connect the brain device directly to their own paralysed limbs. This will mean that the person can control their own body again, without relying on a robotic arm. In the near future, he would like to see disabled people feed themselves again and maybe even stand up using BrainGate.

Clearly, this research could change the lives of disabled people but they are not the only ones who are interested in it. The military think it could be very useful, too. It is easy to understand why scientists might be worried about how thought-controlled machines could be used by the military.

The robots are coming - or are they?

Artificial Intelligence, or AI, is different from most technologies in that scientists still understand very little about how intelligence works. Physicists have a good understanding of Newtonian mechanics and the quantum theory of atoms and molecules, whereas the basic laws of intelligence remain a mystery. But a sizeable number of mathematicians and computer scientists, who are specialists in the area, are optimistic about the possibilities.

Over the years, various problems have impeded all efforts to create robots. To attack these difficulties, researchers tried to use the 'top-down approach', using a computer in an attempt to program all the essential rules onto a single disc. By inserting this into a machine, it would then become self-aware and attain human-like intelligence. In the 1950s and 1960s great progress was made, but the shortcomings of these prototype robots soon became clear. They were huge and took hours to navigate across a room. Meanwhile, a fruit fly, with a brain containing only a fraction of the computing power, can effortlessly navigate in three dimensions. Our brains, like the fruit fly's, unconsciously recognise what we see by performing countless calculations. This unconscious awareness of patterns is exactly what computers are missing. The second problem is robots' lack of common sense.

Because of the limitations of the top-down approach to Artificial Intelligence, attempts have been made to use a 'bottom-up' approach instead - that is, to try to imitate evolution and the way a baby learns. There appeared an idea of tiny 'insectoid' robots that learned to walk by bumping into things instead of computing mathematically the precise position of their feet. Today insectoid robots are on Mars gathering data for NASA. For all their successes in mimicking the behaviour of insects, however, robots using neural networks have performed miserably when their programmers have tried to duplicate in them the behaviour of higher organisms such as mammals.

There are people who believe that eventually there will be a combination between the top-down and bottom-up, which may provide the key to Artificial Intelligence. The computer expert Hans Moravec thinks that in the future robots will be programmed with emotions as emotions are vital in decision-making. There is no universal consensus as to whether machines can be conscious, or even, in human terms, what consciousness means. Robots might eventually attain a 'silicon consciousness'. They, in fact, might one day embody an architecture for thinking and processing information that is different from ours - but also indistinguishable. If that happens, the question of whether they really 'understand' becomes largely irrelevant. A robot that has perfect mastery of syntax, for all practical purposes, understands what is being said.

7. How is Artificial Intelligence different from most technologies?
- | | |
|--|--|
| A in understanding Newtonian mechanics | C in mathematical calculations |
| B in the absence of clear understanding of intelligence functioning | D in a better understanding of the quantum theory of atom |
8. Not all scientists believe that AI will eventually be developed but ...
- | | |
|--|-----------------------------|
| A most technologists do. | C all physicists do. |
| B a great number of computer scientists do. | D all biologists do. |
9. The way leading scientists to creating robots ...
- | | |
|---------------------------------------|---|
| A has not been started yet. | C had a number of obstacles on it. |
| B was not impeded by anything. | D was clear and triumphant. |
10. What insect proved the superiority of natural intelligence over artificial intelligence?
- | | |
|-----------------------|----------------------|
| A a bee | C a fruit fly |
| B a dragon fly | D a spider |
11. The insectoid robots were successful in ...
- | | |
|--|---|
| A mimicking the behaviour of insects. | C thinking and processing information. |
| B duplicating the behaviour of mammals. | D imitating human emotions. |
12. A robot might be hoped to understand human speech if ...
- | | |
|--|--|
| A he has a perfect mastery of syntax. | C he has human-like common sense. |
| B he has human-like emotions. | D he becomes self-aware. |

TASK 3 Read the text. Choose the most suitable heading from the list (A – G) for each part of the text (13 – 18). There is one extra heading which you do not need to use.

12 points

- A Global English and the English language native speakers.
- B Typical violations of standard English grammar in international communication.
- C The role of territorial variants of the English language.
- D A new international attitude to the English language.
- E Native and non-native speakers of English in communication.
- F English is the language of international business.
- G Different aims of communication and the problem of correctness.

Whose Language?

13 _____ How many people can speak English? Some experts estimate that 1.5 billion people – around one-quarter of the world's population – can communicate reasonably well in English. Never in recorded history has a language been as widely spoken as English is today. The reason why millions are learning it is simple: it is the language of international business and therefore the key to prosperity. It is not just that multinational companies such as Microsoft, Google, and Vodafone conduct their business in English; it is the language in which the Chinese speak to Brazilians and Germans to Indonesians.

14 _____ David Graddol, the author of *English Next*, says it is tempting to view the story of English simply as a triumph for its native speakers in North America, Britain and Ireland, and Australasia – but that would be a mistake. Global English has entered a more complex phase, changing in ways that the English-speaking countries cannot control and might not like.

15 _____ An important question one might ask is: whose English will it be in the future? Non-native speakers now outnumber native English speakers by three to one. The majority of encounters in English today take place between non-native speakers. According to David Graddol, many business meetings held in English appear to run more smoothly when there are no native English speakers present. This is because native speakers are often poor at ensuring that they are understood in international discussions. They tend to think they need to avoid longer Latin-based words, but in fact comprehension problems are more often caused by their use of colloquial English, especially idioms, metaphors, and phrasal verbs. On one occasion, at an international student conference in Amsterdam, conducted in English, the only British representative was asked to be 'less English' so that the others could understand her.

16 _____ Professor Barbara Seidlhofer, Professor of English and Applied Linguistics at the University of Vienna, records and transcribes spoken English interactions between speakers of the language around the world. She says her team has noticed that non-native speakers are varying standard English grammar in several ways. Even the most competent speakers sometimes omit the 's' in the third person singular. Many omit definite and indefinite articles where they are required in standard English, or put them in where standard English does not use them. Nouns that are not plural in native-speaker English are used as plurals by non-native speakers (e.g. 'informations', 'knowledges', 'advices'). Other variations include 'make a discussion', 'discuss about something' or 'phone to somebody'.

17 _____ Many native English speakers will insist that these are not variations, they are mistakes. 'Knowledges' and 'phone to somebody' are simply wrong. Many non-native speakers who teach English around the world would agree. But language changes, and so do notions of grammatical correctness. Those who insist on standard English grammar remain in a powerful position. Academics who want their work published in international journals have to adhere to the grammatical rules followed by native English-speaking elites. But spoken English is another matter. Why should non-native speakers bother with what native speakers regard as correct? Their main aim, after all, is to be understood by one another, and in most cases there is no native speaker present.

18 _____ Professor Seidlhofer says, 'I think that what we are looking at is the emergence of a new international attitude, the recognition and awareness that in many international contexts non-native speakers do not need to speak like native speakers, to compare themselves to them, and thus always feel 'less good.'

TASK 4 Read the text. Choose the answer (A, B, C, or D) which best fits each space (19 – 33).

30 points

A water crisis

The Sahara's meagre resources are being plundered **19** _____ the present day. This is shown most clearly in the dramatic fall in the region's precious water reserves. The rock is of a type which hinders easy underground storage **20** _____ the water supply depends on rainfall. This being so, it is easy to understand why it varies. **21** _____, the **22** _____ of the situation goes far **23** _____ mere seasonal changes.

There is one district where observations go **24** _____ at least 125 years. Here it is known that wells of the balance beam type were once used in cultivated areas. This way of drawing water is intended for the **25** _____ of gardens and small plots and works only if there is water not more **26** _____ about five metres **27** _____ the surface. Today, though, not one well of this type exists. They have all been replaced by wells from **28** _____ the water has to be raised by draught animals, **29** _____ it is now 25 metres down. Here, then, the water level has evidently dropped by 20 metres in little over a century.

In a classic example of a vicious circle, **30** _____ of water has led to the digging of more wells to save the flocks and birds. As these have been deepened the water supply has been further depleted. This has resulted in soil erosion which then dries out the land still further.

The Air region was once regarded as the Switzerland of Africa because of its temperate climate. It was criss-crossed by valleys filled with palm trees and was thronged with wildlife. Nowadays, though, there are only a third of the palms which existed there at the turn of the century. The amount of wildlife has shown a **31** _____ fall. So, too, has the number of human beings who can now survive in the area. This is highly **32** _____ in a world where the overall **33** _____ is growing rapidly. We cannot afford to lose fertile land.

- | | | | | |
|------------|----------------------|---------------------|------------------------|--------------------------|
| 19. | A up to | B from | C right to | D since |
| 20. | A such | B so | C as | D then |
| 21. | A although | B even so | C however | D therefore |
| 22. | A seriousness | B seriously | C serious | D seriosity |
| 23. | A forward | B above | C over | D beyond |
| 24. | A forth | B back | C far | D to |
| 25. | A irrigated | B irrigate | C irrigation | D irrigating |
| 26. | A that | B than | C from | D of |
| 27. | A over | B above | C between | D below |
| 28. | A that | B which | C what | D whose |
| 29. | A because of | B thus | C because | D instead |
| 30. | A shorten | B shortage | C shortness | D shortly |
| 31. | A proportion | B portion | C proportionate | D proportionately |
| 32. | A dangerous | B danger | C dangerously | D endangered |
| 33. | A populace | B population | C populate | D popular |

TASK 5 Write a composition on the proposed topic (140-160 words).

34 points

Some people think that progress is always good, others speak about its negative aftereffects. What do you think of it?

Head of the Subject Panel

(signature)

(name)